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Titolo	Advancement of shock capturing computational fluid dynamics methods : numerical flux functions in finite volume method / / Keiichi Kitamura
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ISBN	981-15-9011-7
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Descrizione fisica	1 online resource (XI, 136 p. 52 illus., 13 illus. in color.)
Disciplina	532.05
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Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Introduction: Brief Review of Finite Volume Method (FVM) in Computational Fluid Dynamics -- Role and History of Numerical Flux Functions -- Numerical Flux Functions for Ideal Gases -- Numerical Flux Functions Extended to Real Fluids -- Reconstruction and Slope Limiters.
Sommario/riassunto	This book offers a compact primer on advanced numerical flux functions in computational fluid dynamics (CFD). It comprehensively introduces readers to methods used at the forefront of compressible flow simulation research. Further, it provides a comparative evaluation of the methods discussed, helping readers select the best numerical flux function for their specific needs. The first two chapters of the book reviews finite volume methods and numerical functions, before discussing issues commonly encountered in connection with each. The third and fourth chapter, respectively, address numerical flux functions for ideal gases and more complex fluid flow cases— multiphase flows, supercritical fluids and magnetohydrodynamics. In closing, the book highlights methods that provide high levels of accuracy. The concise content provides an overview of recent advances in CFD methods for shockwaves. Further, it presents the author’s insights into the advantages and disadvantages of each method, helping readers implement the numerical methods in their own research.

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Descrizione fisica	1 online resource
Soggetti	Astronomy - Data processing Information storage and retrieval systems - Astronomy Astronomy - Mathematics Astronomy - Information technology Periodicals.
Lingua di pubblicazione	Inglese
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Note generali	Refereed/Peer-reviewed